United States
Environmental Protection
Agency

EPA Expands Lead Cleanup Area

Jacobsville Neighborhood Soil Contamination Site
Evansville, Indiana June 2009

Participate in the cleanup decision

If you are interested in the Jacobsville Neighborhood Soil Contamination site cleanup, please attend one of two public hearings: Tuesday, June 23, 6:30 to 8:30 p.m., or Wednesday, June 24, 10 a.m. to noon Evansville Vanderburgh Public Library, 200 S.E. Martin Luther King Jr. Blvd., Evansville, in Browning Rooms A & B.

The proposed cleanup plan will be discussed and attendees can comment on the plan either orally or by submitting their written statements.

Comments on the proposed plan can be submitted to EPA from June 11 through July 10, 2009, in these ways:

- Orally or in writing at the public hearing.
- In writing on the enclosed comment sheet and send with postage to the listed address.
- Electronically via the Internet at epa.gov/region5/publiccomment/.

Contact EPA

Dave Novak
Community Involvement Coordinator
Superfund Division (mail code SI-7J)
77 W. Jackson Blvd.
Chicago, IL 60604
312-886-7478
novak.dave@epa.gov

Mary Tierney
Remedial Project Manager
Superfund Division (mail code SR-6J)
77 W. Jackson Blvd.
Chicago, IL 60604

(continued on back page)

In order to clean up contaminated residential yards in 12 different Evansville neighborhoods, U.S. Environmental Protection Agency Region 5 is proposing to expand the cleanup area and remove soil from properties containing lead and arsenic concentrations above safe levels and replace it with clean soil. In February 2008, EPA announced its first plan to clean up the Jacobsville neighborhood. In this new plan, the cleanup is being expanded to cover an area of about 4½ square miles located both to the north and south of the Lloyd Expressway. The expanded area will include a number of neighborhoods in addition to Jacobsville (see map on page 2). EPA expects to test nearly 10,000 homes and estimates about 4,000 homes may need to be cleaned up. The work is expected to last 10 to 15 years. Although the new cleanup area will extend beyond the immediate Jacobsville neighborhood, the site will still go by that name since the contamination is thought to have originated there.

EPA has set the safety threshold for lead at the Jacobsville site at 400 parts lead per million parts soil (parts per million is abbreviated ppm), and for arsenic, the limit is 30 ppm. A part per million is a tiny amount, similar to one second in 12 days, but even small amounts of hazardous substances can cause health problems. The purpose of the cleanup is to prevent human exposure to lead and arsenic, especially in children. Lead is considered the main contaminant of concern because it is more widespread at the site than arsenic.

The purpose of this proposed plan fact sheet is to provide background information about the expanded Jacobsville site, describe the various cleanup options considered, and identify EPA's preferred cleanup alternative.[1] Only three cleanup options were considered: soil removal, treatment of soil in-place, and no action. EPA's preferred alternative is the first one – soil removal. If that option is approved, after removing the soil, yards would be backfilled with clean dirt and seeded. Any trees or shrubs that are removed will also be replaced. The public is encouraged to comment on this proposal. EPA will be accepting comments from June 11 through July 10, 2009. See the adjacent box for ways you can participate in the cleanup decision.

EPA along with state partner Indiana Department of Environmental Management will select a final cleanup plan for the expanded Jacobsville site. This will occur after review and consideration of information provided by the public during the comment period and public hearing. The final cleanup proposal will be announced with a notice in a local newspaper and presented in an EPA document called a record of decision or ROD. It could differ from this proposed plan depending on information EPA receives during the public comment period.

[1] *Section 117(a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, known as the Superfund law) requires EPA to provide an opportunity for public input with a meeting and comment period. It also requires a newspaper ad announcing the proposed cleanup plan. This fact sheet summarizes an EPA document called a remedial investigation/feasibility study. The full study and all other official site documents can be found at the Evansville Vanderburgh Public Library.*

Environmental officials have to set priorities for this large cleanup that will last a number of years. As a result, contaminated yards where children and pregnant women live will be given priority in this cleanup. EPA, IDEM, the city of Evansville and the Vanderburgh County Health Department will ask individuals to voluntarily identify priority properties.

The public is encouraged to review the supporting documents for the Jacobsville Neighborhood Soil Contamination site. The information includes the remedial

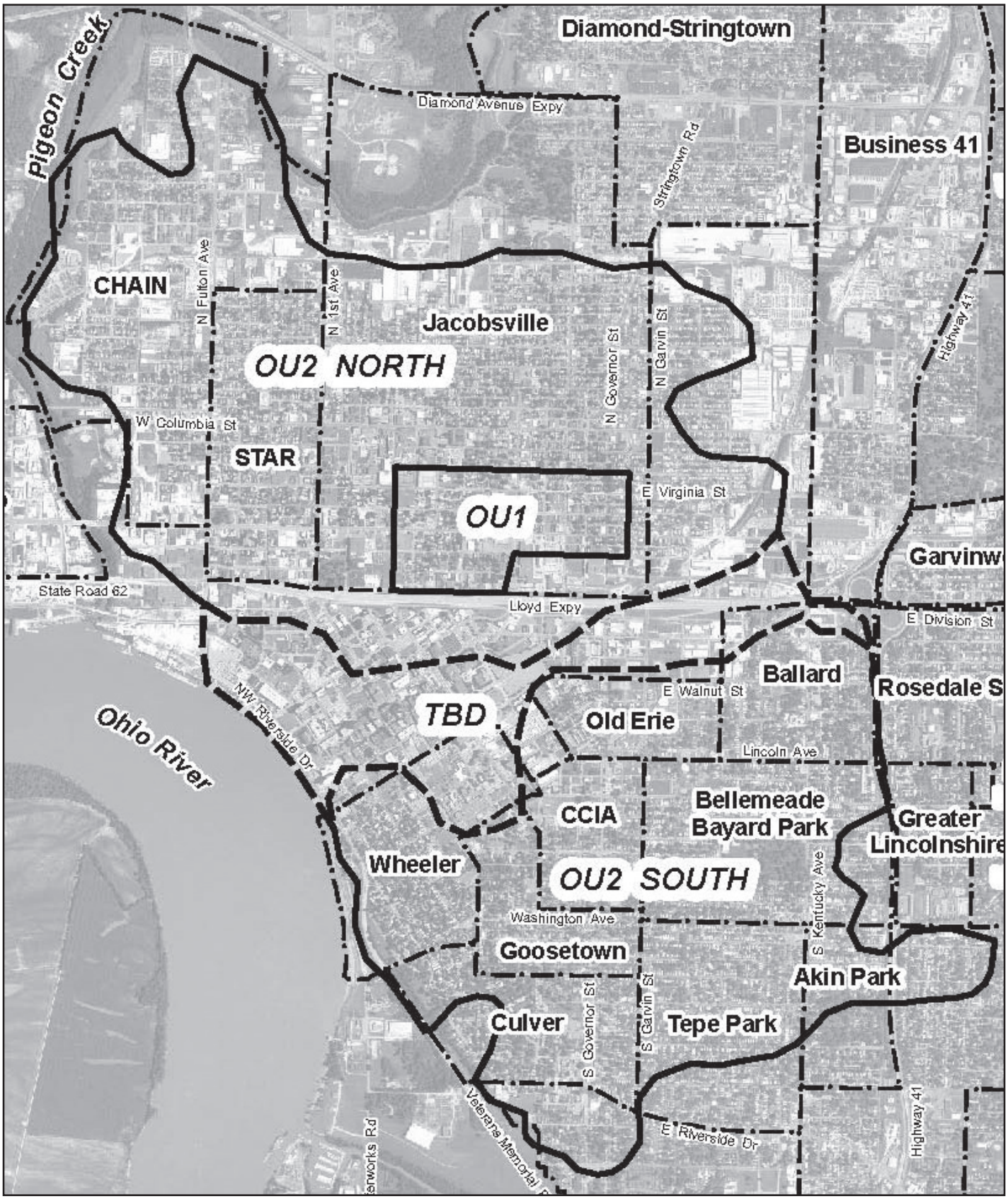

Figure 1 – Expanded cleanup areas referred to as OU2 (Operable Unit 2) are shown along with neighborhood associations.

investigation report, feasibility study, and the human health and ecological risk assessment. The remedial investigation studies the nature and extent of contamination at the site, while the feasibility study evaluates different cleanup options. The risk assessment looks at potential health risks to people and the environment from contamination at the site. You can review these reports at the information repository near the site: Evansville Vanderburgh Public Library - Central Branch.

About the Jacobsville site

The Jacobsville Neighborhood Soil Contamination site is located in Evansville, Ind., in Vanderburgh County. The February 2008 record of decision outlined the selected cleanup plan for the initial study area, which is referred to as Operable Unit 1 or OU1. OU1 covers about 141 acres and 500 residential properties and is bounded by Mary Street to the west, Iowa Street to the north, Elliot Street to the east, and Division and Illinois streets to the south. This initial area will be cleaned up in 2009, 2010, and 2011. Later studies by EPA showed the lead and arsenic contamination covered a larger area (see map on page 2). The focus of this proposed plan is this larger area, referred to as Operable Unit 2. OU2 covers about 4½ square miles and about 10,000 residential properties. EPA estimates about 4,000 of these 10,000 properties will require cleanup. Cleanup of OU2 properties may not begin until 2012 and will last a number of years. Both areas, OU1 and OU2, are primarily residential with some commercial and industrial properties.

In 1990 and again in 2003 EPA conducted an emergency cleanup at the Evansville Plating Works, an abandoned electroplating and metal refinishing facility, by removing all liquids and hazardous materials, demolishing the building and disposing of contaminated soils. In 2000, however, lead contamination in the Jacobsville neighborhood was discovered when IDEM tested soil in nearby yards. Analysis of the samples showed some lead "hot spots," with levels more than 6,000 ppm. The site-specific acceptable health limit is 400 ppm. IDEM began looking for facilities other than Evansville Plating Works that could have contributed to the high levels of lead in the area. Four former plants – all closed for at least 50 years – were identified as possible contributors to the lead contamination – Blount Plow Works, Advance Stove Works, Newton-Kelsay, and Sharpes Shot Works. It is possible that a number of other plants and foundries could have contributed to the contamination also.

- Blount Plow Works operated from the 1880s to the 1940s as a manufacturer of horse-driven plows. The facility operated a foundry where metal castings were produced.
- Advance Stove Works operated from the turn of the last century to the 1950s as a manufacturer of stoves and a foundry.
- Newton-Kelsay operated from around the early 1900s to the 1950s. That site manufactured harness parts for animals.
- Sharpes Shot Works operated from 1878 to an unknown date and manufactured lead shot for guns.

It is believed that airborne dust, soot and smoke from plant operations deposited lead on neighborhood soil. Arsenic may have been deposited by airborne dust from foundries, the burning of coal, and from other industrial processes. Because these companies have long been out of business, EPA and IDEM will pay for cleaning up the site. The Jacobsville site was placed on the National Priorities List in 2004. The NPL is a roster of the nation's most hazardous waste sites that are eligible for cleanup under EPA's Superfund program. EPA has done several rounds of soil testing to determine the boundaries of the contamination. The Agency also has studied cleanup options and developed cost estimates.

Public outreach

To keep the public informed of activities at the site and the danger of lead and arsenic contamination, EPA has held informal information sessions, made presentations at Jacobsville neighborhood meetings, mailed fact sheets to residents and talked to many people in the area while sampling yards. EPA and its other federal, state and local partners such as the federal Agency for Toxic Substances and Disease Registry (ATSDR), IDEM, city of Evansville and Vanderburgh County will be cooperating to develop an education campaign about lead and arsenic poisoning.

All about lead

Lead is a naturally occurring heavy metal but was also deposited on soil through vehicle exhaust when leaded gasoline was used and by industrial activity. Lead can be found in the air, water, food and dust in cities because of the widespread use of lead in manufactured products and heavy traffic volumes.

The federal government regulates the amount of lead in the air, water and soil. Lead is highly toxic and can cause a range of health effects, from behavioral problems and learning disabilities to seizures and death. Children 6 years old and younger and unborn children are most at risk because their bodies are growing quickly and the effects of the lead can cause problems. Children often have higher levels of exposure because they play in dirt and may put dirty hands in their mouths. Also, children who lack proper nutrition may absorb more lead and suffer more harmful effects. To learn more about lead visit www.atsdr.cdc.gov/tfacts13.html.

In addition, the Vanderburgh County Health Department provides free blood lead testing and some indoor lead testing. During public meetings, EPA has encouraged residents to go in for lead testing.

Environmental officials want to alert parents to the fact that children can be exposed to lead from many sources besides soil, such as drinking water from old lead pipes and swallowing interior or exterior lead-based paint chips and dust. Lead in paint was banned in 1978 but homes built before that may still contain leaded paint. EPA will be partnering with other agencies to develop an outreach program to educate residents about the dangers of lead and arsenic and how to avoid them.

Summary of site risks

A study of potential risks to public health, wildlife and the environment was conducted for the Jacobsville site. Coming into contact with lead- and arsenic-contaminated soil in their yards was found to be the greatest health risk to people. Other types of properties where exposure may occur also were considered, including ball fields, parks, day cares and similar properties. Small children are the most sensitive to lead exposure. The risk to wildlife was found to be much less than humans.

All soil in the highly industrialized United States contains chemicals of various kinds and concentrations. Lead commonly occurs in soil throughout the country, even in rural areas, because leaded gasoline was widely used until the 1980s. The safe level for lead at the Jacobsville site was set by predicting the concentrations that would result in a no more than 5 percent risk of children having a blood level greater than the point where harmful effects from lead may start to occur. Although not nearly as widespread as lead, arsenic was also found in the study area at levels above normal concentrations. Based on levels that will protect human health, EPA selected 400 ppm as the cleanup goal for lead and 30 ppm as the cleanup goal for arsenic. The risk assessment found the cleanup goals of 400 ppm for lead and 30 ppm for arsenic will protect people's health and the environment.

Cleanup options

EPA considered three options for cleaning up Operable Unit 2 in the Jacobsville Neighborhood Soil Contamination site. Each was evaluated against nine criteria required by the Superfund law (see criteria explanation in the box below). The three options are summarized below. Full details are available in the technical documents on file in the Evansville Vanderburgh Public Library - Central Branch.

Option 1—No further action

EPA includes a "no action" alternative as a basis for comparison with other cleanup options. Since no action

Cleanup criteria

EPA uses nine criteria to evaluate and compare cleanup options. See the table on Page 5 comparing the alternatives against these criteria.

1. Overall protection of human health and the environment addresses whether an option adequately protects human health and the environment. This criterion can be met by reducing or eliminating contaminants or by reducing people's exposure to them.

2. Compliance with applicable or relevant and appropriate requirements, referred to as ARARs, ensures that each cleanup option complies with federal, state, and local laws and regulations.

3. Long-term effectiveness and permanence evaluates how well a cleanup option will work in the long term, including how safely remaining contaminants can be managed.

4. Reduction of toxicity, mobility, or volume through treatment addresses how well the cleanup option reduces the harmful effects, movement, and amount of contaminants.

5. Short-term effectiveness compares how quickly the cleanup can be completed and the health risks posed to cleanup workers and nearby residents while the alternative is under construction.

6. Implementability assesses how difficult the cleanup option will be to construct and operate, and whether technology, materials and services are readily available.

7. Cost compares the expense of each option over time in a financial calculation called present worth. Cost includes capital expenditures plus operation and maintenance costs. Present worth is the total cost of an alternative over time in terms of today's dollar value. A cleanup is considered cost effective if its costs are proportionate to its overall effectiveness.

8. State acceptance is whether the state environmental agency, in this case IDEM, agrees with EPA's recommended option. EPA evaluates state acceptance after it receives comments on its preferred option.

9. Community acceptance evaluates how well the community near the site accepts the option. EPA and IDEM will evaluate community acceptance after the public comment period.

would be taken, this option would increase the potential for human and animal contact with the lead- and arsenic-contaminated soil in the area of the Jacobsville site.
Cost—$0

Option 2—Soil excavation and disposal, backfill, and site restoration (EPA's preferred cleanup alternative)

This choice consists of digging up soil with lead and arsenic levels exceeding the site-specific cleanup levels of 400 ppm and 30 ppm. The contaminated soil will then be hauled by truck for off-site disposal at an approved landfill. Clean soil will then be used to backfill the yards, and the properties will be restored as closely as possible to their original condition.
Cost—$134.9 million

Option 3—In-place treatment of soil and site restoration

This alternative consists of mixing a safe chemical mixture into the soil that will change the characteristics of the lead and arsenic so they will not be absorbed by the human body. The yards will then be restored as closely as possible to their original condition.
Cost—$157.8 million

How do the options compare?

EPA evaluated the various cleanup options against seven of the nine criteria required by the Superfund law (see the comparison chart below) and selected its preferred alternative. The last two criteria, state and community acceptance, will be evaluated after EPA receives state and public comments. More information about the evaluation is in the site feasibility study report contained at the Evansville Vanderburgh Public Library - Central Branch. For cleanup of the site, EPA's proposed choice is Option 2 –soil excavation and disposal, backfill and site restoration.

If some properties cannot be cleaned up because EPA is unable to get access to them, some restrictions on the properties, such as a notice on the deed, may be put into place. A publicly available register of contaminated properties may also be maintained. Contamination above risk-based levels may remain on some properties after cleanup is complete. If that happens EPA will review the site at least every five years to ensure the cleanup continues to protect human health and the environment.

Evaluation of cleanup options

Option 1-no action is not desirable because it would leave all exposure risks from lead and arsenic in place.

Option 2 would be a permanent solution that would allow residents to use their lawns freely without risk of exposure. The long-term effectiveness of Option 3 is not quite as certain as Option 2 because it is an innovative technology. Both Options 2 and 3 would temporarily inconvenience residents because equipment would be used on the lawns to perform the cleanup. Option 2 would be less invasive because it would take slightly less time. Option 2 also is less costly than Option 3.

Next steps

EPA in consultation with IDEM will evaluate public and state response to the preferred cleanup option during the comment period (including the public meeting) before deciding on a final choice. Based on new information or public comments, EPA may modify its proposed option or select another cleanup alternative outlined in this fact sheet. EPA encourages you to review and comment on the cleanup choices. More technical detail on the proposed cleanup plan is available in the official documents on file at the Evansville Vanderburgh Public Library - Central Branch. EPA will respond in writing to the comments in a file called a responsiveness summary, which will be part of the final record of decision. EPA will announce the selected cleanup plan in a local newspaper advertisement and will place a copy of the ROD in the information repository.

Evaluation criteria for the lead cleanup

Criterion	Option 1 No Action	Option 2 Excavation, backfill and site restoration*	Option3 Soil treatment and site restoration
Overall protection of human health and the environment	☐	■	■
Meets ARARs	☐	■	■
Long-term effectiveness and permanence	☐	■	◘
Reduction of toxicity, mobility, or volume through treatment	☐	☐	■
Short-term effectiveness	☐	◘	◘
Implementability	■	■	◘
Cost (Present worth)	$0	$134.9 million	$157.8 million
State acceptance	Will be evaluated after the public comment period		
Public acceptance	Will be evaluated after the public comment period		
	■Fully meets criteria	◘Partially meets criteria	☐Does not meet criteria
	*EPA's recommended option		

United States
Environmental Protection
Agency

Region 5
Superfund Division (SI-7J)
77 W. Jackson Blvd.
Chicago, IL 60604-3590

RETURN SERVICE REQUESTED

JACOBSVILLE NEIGHBORHOOD SOIL CONTAMINATION SITE:
EPA Expands Lead Cleanup Area

This fact sheet is printed on paper made of recycled fibers.

Jacobsville info toll-free:

A dedicated toll-free phone line for the Jacobsville site has been set up. Residents with questions or concerns, or who desire further information can call EPA Region 5 at 888-838-1304 and leave a message. This line is operational 24-hours a day and will remain operational for the Jacobsville site until further notice.

Get site information automatically:

Anyone can receive Jacobsville site information automatically via the Internet by signing up. Go to: https://lists.epa.gov/read/all_forums/ and subscribe or send an e-mail to: subscribe-jacobsville@lists.epa.gov. By doing this you will get information faster.

Site-related documents

Official files can be viewed at:

Evansville Vanderburgh Public Library - Central Branch – Public Comment Shelf, Second Floor, 200 S.E. Martin Luther King Jr. Blvd., Evansville

http://epa.gov/region5/sites/jacobsville/

EPA Region 5 Records Center, 77 W. Jackson Blvd., 7th Floor, Chicago, Ill.

Comment Sheet

EPA is interested in your comments on the proposed cleanup plan for the Jacobsville Neighborhood Soil Contamination site. EPA will consider public comments before selecting a final cleanup plan. Please use the space below to write your comments, then fold and mail this form. Comments must be postmarked by July 10. If you have general questions, contact EPA Community Involvement Coordinator Dave Novak at 800-621-8431, Ext. 67478. Those with Internet access may submit their comments to EPA at www.epa.gov/region5/publiccomment/.

Name _____

Address _____

City _____ State _____

Zip _____

Fold on Dashed Lines, Tape, Stamp, and Mail

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Place Stamp Here

Dave Novak
Community Involvement Coordinator
EPA Region 5 (SI-7J)
77 W. Jackson Blvd.
Chicago, IL 60604-3590